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(54) Title: POLYMERS, THEIR PREPARATION AND USES

(57) Abstract

An organic polymer having a plurality of regions along the length of the polymer backbone and comprising two or more of the following a first region for transporting negative charge carriers and having a first bandgap defined by a first LUMO level and a first HOMO level; and a second region for transporting positive charge carriers and having a second bandgap defined by a second LUMO level and a second HOMO level; and a third region for accepting and combining positive and negative charge carriers to generate light and having a third bandgap defined by a third LUMO level and a third HOMO level, wherein each region comprises one or more monomers and the quantity and arrangement of the monomers in the organic polymer is selected so that the first, second and third bandgaps are distinct from one another in the polymer.